

WASHINGTON TREE SEED TRANSFER ZONES

Summer 2002



WASHINGTON STATE DEPARTMENT OF
Natural Resources



Acknowledgments


This publication was funded through a grant from USDA Forest Service Cooperative Programs. The work was coordinated by Jeff DeBell of the Washington State Department of Natural Resources. We gratefully acknowledge the helpful input of many reviewers, ranging from geneticists to field foresters. Also, this publication is based on the previous work of numerous researchers, and a special debt is owed to Bob Campbell, Frank Sorenson and Jerry Rehfeldt of the USDA Forest Service, whose research comprises a considerable portion of the information used to develop these seed transfer zones.

Prepared by the Washington State Department
of Natural Resources (DNR) 2002.

To obtain this publication in an alternate format,
call TTY (360) 902-1125 or (360) 902-1720.

Equal Opportunity Employer.

Printed on recycled paper. 
Printed with vegetable-based ink.
Printed in the U.S.A.



WASHINGTON TREE SEED TRANSFER ZONES

Summer 2002

William K. Randall

USDA Forest Service, retired

and Paul Berrang,

USDA Forest Service, Winema National Forest



WASHINGTON STATE DEPARTMENT OF
Natural Resources



Contents

1	Introduction
3	History of Seed Zones with Map
5	Developing Seed Zones
7	General Seed Transfer Guidelines for Washington
9	Seed Orchard Seed
11	<i>Abies amabilis</i> – Pacific Silver Fir
13	<i>Abies grandis</i> – Grand Fir
17	<i>Abies procera</i> – Noble Fir
19	<i>Alnus rubra</i> – Red Alder
23	<i>Chamaecyparis nootkatensis</i> – Alaska Yellow-Cedar
25	<i>Larix occidentalis</i> – Western Larch
27	<i>Picea engelmannii</i> – Engelmann Spruce
29	<i>Picea sitchensis</i> – Sitka Spruce
33	<i>Pinus contorta</i> – Lodgepole Pine and Shore Pine
37	<i>Pinus monticola</i> – Western White Pine
39	<i>Pinus ponderosa</i> – Ponderosa Pine
43	<i>Populus trichocarpa</i> – Black Cottonwood and <i>Populus</i> Hybrids
47	<i>Pseudotsuga menziesii</i> – Douglas-Fir
55	<i>Taxus brevifolia</i> – Pacific Yew
57	<i>Thuja plicata</i> – Western Redcedar
59	<i>Tsuga heterophylla</i> – Western Hemlock
63	References Cited
